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	licant's or agent's file			FOR FURTHER A	CTION		
see	oform PCT/ISA/2	20		See paragraph 2 below			
1	mational application T/IB2005/050012		International filing date (d	day/month/year)	-	ate (day/month	lyear)
		<u> </u>	04.01.2005		06.01.2	004	_
	mational Patent Clas 0L19/02	sification (IPC) or	both national classification	and IPC			
	licant NINKLIJKE PHIL	JPS ELECTRO	ONICS NV				
					<del></del>		
1.	This opinion co	ontains indication	ons relating to the follo	owing items:			
	☑ Box No. I	Basis of the op	·	0			
	☐ Box No. II	Priority	WIIIOTT				
	☐ Box No. III	Non-establishn	nent of opinion with rega	ard to novelty, inventive	step and	Industrial ap	plicability
	☐ Box No. IV	Lack of unity of		•		•	, <b>y</b>
	☑ Box No. V	Reasoned state applicability; cit	ement under Rule 43 <i>bis.</i> tations and explanations	.1(a)(i) with regard to n supporting such states	ovelty, Inv	ventive step o	or industrial
	☐ Box No. VI	Certain docume					
	☐ Box No. VII		in the international app				
	☐ Box No. VIII	Certain observa	ations on the internation	al application			•
2.	FURTHER ACTI	ON			•		•
	written opinion of	t the Internationa	Iminary examination is mal Preliminary Examining to the than this one to	Authority ("IPFA") Ho	wover th	is does not a	nnly whore

International Bureau under Rule 66.1 bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

For further details, see notes to Form PCT/ISA/220.

Name and malling address of the ISA:



European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016

**Authorized Officer** 

Blaas, D-L

Telephone No. +31 70 340-3244



International application No. PCT/IB2005/050012

		·
_	Вох	No. I Basis of the opinion
1.	With the I	regard to the language, this opinion has been established on the basis of the international application in anguage in which it was filed, unless otherwise indicated under this item.
		This opinion has been established on the basis of a translation from the original language into the following anguage , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2.	With nece	regard to any <b>nucleotide and/or amino acid sequence</b> disclosed in the international application and ssary to the claimed invention, this opinion has been established on the basis of:
	a. ty	pe of material:
		a sequence listing
		table(s) related to the sequence listing
	b. for	mat of material:
		in written format
		in computer readable form
	c. tim	e of filing/furnishing:
		contained in the international application as filed.
		filed together with the international application in computer readable form.
		furnished subsequently to this Authority for the purposes of search.
3.	h	n addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto as been filed or furnished, the required statements that the information in the subsequent or additional opies is identical to that in the application as filed or does not go beyond the application as filed, as ppropriate, were furnished.
4.	Additi	onal comments:

International application No. PCT/IB2005/050012

Box No. V Reasoned statement under Rule 43*bls*.1(a)(l) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)

Yes: Claims

1-20

No: Claims

Inventive step (IS)

Yes: Claims

No:

1-20

Industrial applicability (IA)

Yes: Claims

Claims

1-20

No: Claims

2. Citations and explanations

see separate sheet

#### Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1 Reference is made to the following document/s/:

D1: DE-A1-198 32 472 (Robert Bosch GmbH) 27th January 2000 (2000-01-27)

D2: EP-A2-1 170 727 (NEC Corporation) 9nth January 2002 (2002-01-09)

D3: EP-A-0 554 962 (NOVANEX AUTOMATION N.V) 11 August 1993 (1993-08-11)

The document D1 is regarded as being the closest prior art to the subject-matter of claim 1, and shows (the references in parentheses applying to this document):

A method for automatically equalizing an audio signal (22, 28), the method comprising:

measuring spectral energy values (52) for a plurality of frequency bands; determining spreaded energy values (12, 14) for each frequency band based on the measured spectral energy values and

a spreading function (46, 42), the spreading function defining a spread of sprectral energy across frequency bands; and

updating equalizer settings for each frequency band based on the measured spectral energy values and the spreaded spectral energy values.

Although claim 1 could be read in this sense onto D1, it is clear from the description that the terms "spreaded energy value", "spreading function", and "measured energy value" do have a particular meaning in the context of the present application. These features are determined on page 6, lines 1 to 10. Therefore it is considered that claim 1 is new (Article 33(2) PCT).

The subject-matter of claim 1 differs from this known D1 in that the audio enhancement is done essentially on the acoustics in the room and not on the signal source of the audio signal. The problem to be solved in this context would be how to further enhance the audio signal itself independent of the surrounding room.

The solution to this problem proposed in claim 1 of the present application is

# WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (SEPARATE SHEET)

International application No.

PCT/IB2005/050012

considered as involving an inventive step (Article 33(3) PCT) for the following reasons:

No document in the found prior art discloses to enhance the audio signal by using psycho acoustic findings and creating special spreading functions to detect a masking energy and to enhance masked energy portions of the audio signal.

Claims 2 - 9 are dependent on claim 1 and as such also meet the requirements of the PCT with respect to novelty and inventive step.

The same reasoning applies; mutatis mutandis, to the subject-matter of the corresponding independent claims 10 and 19, and equally to the dependent claims 11 - 18 and 20, which therefore are also considered new and inventive.

### PATENT COOPERATION TREATY

### **PCT**

### INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference PHUS040009WO	FOR FURTHER ACTION	See item 4 below	
International application No. PCT/IB2005/050012	International filing date (day/month/year) 04 January 2005 (04.01.2005)	Priority date (day/month/year) 06 January 2004 (06.01.2004)	
International Patent Classification (8th See relevant information in Form P	n edition unless older edition indicated) PCT/ISA/237		
Applicant KONINKLIJKE PHILIPS ELECTRO	DNICS, N.V.		

	,			
1.	This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).			
2.	This REPORT consists of a total			
	In the attached sheets, any referent to the international preliminary re		he International Searching Authority should be read as a reference r I) instead.	
3.	This report contains indications re	elating to the following items	:	
	Box No. I	Basis of the report		
	Box No. II	Priority	·	
	Box No. III	Non-establishment of opini applicability	on with regard to novelty, inventive step and industrial	
	Box No. IV	Lack of unity of invention		
	Box No. V		Article 35(2) with regard to novelty, inventive step or industrial explanations supporting such statement	
	Box No. VI	Certain documents cited		
	Box No. VII	Certain defects in the intern	national application .	
	Box No. VIII	Certain observations on the	international application	
4.	4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis.2).			
			Date of issuance of this report 10 July 2006 (10.07.2006)	
	The International Bureau of WIPO  34, chemin des Colombettes 1211 Geneva 20, Switzerland  Authorized officer  Cecile Chatel			
Facsin	nile No. +41 22 338 82 70	es and	e-mail: pt13@wipo.int	

Form PCT/IB/373 (January 2004)

#### PATENT COOPERATION TREA

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INTERNATIONAL SEARCHING AUTHORITY To: WRITT see form PCT/ISA/220 INTERNATION Date of mailing (day/month/year) see Applicant's or agent's file reference FOR FURTHER A see form PCT/ISA/220 See paragraph 2 below International application No. International filing date (day/month/year) PCT/B2005/050012 04.01.2005 International Patent Classification (IPC) or both national classification and IPC G10L19/02 Applicant KONINKLIJKE PHILIPS ELECTRONICS, N.V.

1.	This opinion co	ontains indications relating to the following items:
	☑ Box No. I	Basis of the opinion
	Box No. II	Priority
	☐ Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
	Box No. IV	Lack of unity of invention
	☑ Box No. V	Reasoned statement under Rule 43bis.1(a)(l) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
	☐ Box No. VI	Certain documents cited
	☐ Box No. VII	Certain defects in the international application
	☐ Box No. VIII	Certain observations on the international application
2.	FURTHER ACTION	ON

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notifed the International Bureau under Rule 66.1 bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



From the

European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016

**Authorized Officer** 

Blaas, D-L

Telephone No. +31 70 340-3244



International application No. PCT/IB2005/050012

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_	. Bo	N xc	o. I Basis of the opinion
1	. Wi	ith re e lar	egard to the <b>language</b> , this opinion has been established on the basis of the international application in inguage in which it was filed, unless otherwise indicated under this item.
		la	nis opinion has been established on the basis of a translation from the original language into the following nguage , which is the language of a translation furnished for the purposes of international search nder Rules 12.3 and 23.1(b)).
2.	Wi	th re	egard to any nucleotide and/or amino acid sequence disclosed in the international application and sary to the claimed invention, this opinion has been established on the basis of:
	a. 1	type	of material:
			a sequence listing
			table(s) related to the sequence listing
	b. f	form	at of material:
			in written format
			in computer readable form
	c. t	ime	of filing/furnishing:
	ł		contained in the international application as filed.
			filed together with the international application in computer readable form.
	ł		furnished subsequently to this Authority for the purposes of search.
3.		cot	addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto s been filed or furnished, the required statements that the information in the subsequent or additional pies is identical to that in the application as filed or does not go beyond the application as filed, as propriate, were furnished.
4	Ado	lition	nal commente

International application No. PCT/IB2005/050012

Box No. V Reasoned statement under Rule 43bis.1(a)(l) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)

Yes: Claims

1-20

No: Claims

Inventive step (IS)

Yes: Claims

Claims

No:

1-20

Industrial applicability (IA)

Yes: Claims

1-20

No: Claims

2. Citations and explanations

see separate sheet

#### Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1 Reference is made to the following document/s/:

D1: DE-A1-198 32 472 (Robert Bosch GmbH) 27th January 2000 (2000-01-27)

D2: EP-A2-1 170 727 (NEC Corporation) 9nth January 2002 (2002-01-09)

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The document D1 is regarded as being the closest prior art to the subject-matter of claim 1, and shows (the references in parentheses applying to this document):

A method for automatically equalizing an audio signal (22, 28), the method comprising:

measuring spectral energy values (52) for a plurality of frequency bands; determining spreaded energy values (12, 14) for each frequency band based on the measured spectral energy values and

a spreading function (46, 42), the spreading function defining a spread of sprectral energy across frequency bands; and

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Although claim 1 could be read in this sense onto D1, it is clear from the description that the terms "spreaded energy value", "spreading function", and "measured energy value" do have a particular meaning in the context of the present application. These features are determined on page 6, lines 1 to 10. Therefore it is considered that claim 1 is new (Article 33(2) PCT).

The subject-matter of claim 1 differs from this known D1 in that the audio enhancement is done essentially on the acoustics in the room and not on the signal source of the audio signal. The problem to be solved in this context would be how to further enhance the audio signal itself independent of the surrounding room.

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# WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (SEPARATE SHEET)

International application No.

PCT/IB2005/050012

considered as involving an inventive step (Article 33(3) PCT) for the following reasons:

No document in the found prior art discloses to enhance the audio signal by using psycho acoustic findings and creating special spreading functions to detect a masking energy and to enhance masked energy portions of the audio signal.

Claims 2 - 9 are dependent on claim 1 and as such also meet the requirements of the PCT with respect to novelty and inventive step.

The same reasoning applies, mutatis mutandis, to the subject-matter of the corresponding independent claims 10 and 19, and equally to the dependent claims 11 - 18 and 20, which therefore are also considered new and inventive.

#### PATENT COOPERATION TREA

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Priority da 06.01.20	te <i>(day/mont</i> 004	th/year)		

From the

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То:			PCT	
see form PCT/ISA/220		INTERNATION	TEN OPINION OF NAL SEARCHING PCT Rule 43 <i>bis</i> .1	3 AUTHORITY
		Date of mailing (day/month/year) see	e form PCT/ISA/210 (seco	and sheet)
Applicant's or agent's file reference see form PCT/ISA/220		FOR FURTHER A See paragraph 2 below		***************************************
International application No. PCT/IB2005/050012	International filing date (d 04.01.2005	day/month/year)	Priority date (day/mont) 06.01.2004	vyear)
International Patent Classification (IPC) or G10L19/02	both national classification	and IPC	1	
Applicant KONINKLIJKE PHILIPS ELECTRO	DNICS, N.V.			
This opinion contains indication	ons relating to the follo	owing items:		
Box No. I Basis of the on	inion			

☑ Box No. I	Basis of the opinion
☐ Box No. II	Priority
☐ Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
☐ Box No. IV	Lack of unity of Invention
☑ Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
☐ Box No. VI	Certain documents cited
☐ Box No. VII	Certain defects in the international application
☐ Box No. VIII	Certain observations on the international application

2. **FURTHER ACTION** 

> If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be secondariated. will not be so considered.

> If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of malling of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:

European Patent Office - P.B. 5818 Patentiaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016

**Authorized Officer** 

Blaas, D-L

Telephone No. +31 70 340-3244



industrial

International application No. PCT/IB2005/050012

Box No. I Basis of the opinion	<del></del>
<ol> <li>With regard to the language, this opinion has been established on the basis of the international application the language in which it was filed, unless otherwise indicated under this item.</li> </ol>	on in
This opinion has been established on the basis of a translation from the original language into the follanguage , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).	llowing 1
2. With regard to any <b>nucleotide and/or amino acid sequence</b> disclosed in the international application an necessary to the claimed invention, this opinion has been established on the basis of:	d
a. type of material:	
□ a sequence listing	
☐ table(s) related to the sequence listing	
b. format of material:	
☐ in written format	
☐ in computer readable form	
c. time of filing/furnishing:	
contained in the international application as filed.	
$\Box$ filed together with the international application in computer readable form.	
☐ furnished subsequently to this Authority for the purposes of search.	
3. In addition, in the case that more than one version or copy of a sequence listing and/or table relating has been filed or furnished, the required statements that the information in the subsequent or addition copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.	thereto 1al
4 Additional comments:	

International application No. PCT/IB2005/050012

Box No. V Reasoned statement under Rule 43*bis*.1(a)(l) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)

Yes: Claims

1-20

No: Claims

Inventive step (IS)

Yes: Claims

Claims

1-20

industrial applicability (IA)

Yes: Claims

No:

1-20

No: Claims

2. Citations and explanations

see separate sheet

#### Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1 Reference is made to the following document/s/:

D1: DE-A1-198 32 472 (Robert Bosch GmbH) 27th January 2000 (2000-01-27)

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## WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (SEPARATE SHEET)

International application No.

PCT/IB2005/050012

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